

February 21, 2020

**VIA ELECTRONIC FILING**

Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 Twelfth Street, S.W.  
Washington, DC

Re: *Rural Digital Opportunity Fund, WC Docket No. 19-126*  
*Connect America Fund, WC Docket No. 10-90*

*Notice of Ex Parte Communication*

Dear Ms. Dortch:

This is to inform you that on February 20 and 21, 2020, representatives of Space Exploration Technologies Corp. ("SpaceX") met with staff from Chairman Pai's Office and Commissioner Carr's Office with respect to the above referenced proceedings. Participants in the meetings are listed in Attachment A. SpaceX also showed the attached presentation.

During these meetings, SpaceX explained that the Commission adopted well-crafted safeguards that strike a balance to encourage intermodal competition while also ensuring no bidder—regardless of technology—will claim they can provide service levels beyond their actual capabilities. SpaceX expressed concern that the draft Public Notice with the procedures for the upcoming subsidy auction may unintentionally and unnecessarily upset this careful balance. In particular, the potential prohibitions on any satellite operator, including any operator of a Low Earth Orbit satellite system, from bidding as low-latency services or from bidding in higher speed performance tiers could upset this careful balance. Proposing this arbitrary ban risks deterring participation in the auction, could harm competition, and ultimately could lead to fewer choices for consumers.

SpaceX explained that the ability of the Starlink system to deliver low-latency service is not an aspirational feature of a proposed system—it results from the laws of physics. Satellite latency is a function of its altitude; SpaceX's system operates at an altitude of 550 kilometers, meaning the round trip time for a signal to be sent from Earth to its satellites and back is a fraction of the 100 millisecond threshold the Commission set for low-latency services. A prohibition that would ban SpaceX from acknowledging the true latency of its service is not supported by evidence and would be contrary to the physics of its system.

SpaceX also explained that its system is specifically designed to provide high-speed broadband to consumers. Just as terrestrial networks must manage their networks to adjust to actual demand and regulatory requirements, SpaceX's sophisticated phased array antennas enable it to dynamically adjust its throughput per user to meet and even exceed the requirements of higher speed performance tiers. This system is not hypothetical; SpaceX has already launched

over 300 satellites, has demonstrated high-speed, low-latency service (see Attachment B), and has an aggressive launch rate that will ensure full coverage to the entire United States. A prohibition on SpaceX from participating in the auction at the levels that match the true capabilities of its system could have the unintended consequence of denying consumers in rural areas the best possible service and choices.

Rather than prohibiting technologies from participating in the auction at their true levels of service, the Commission could encourage more competition for consumers by maintaining the balance it struck in its January Order authorizing the Rural Digital Opportunity Fund auction. The Commission adopted a robust and complete level of safeguards to ensure no bidder misrepresents its service as part of the auction. These safeguards include letters of credit, reporting requirements, withholdings, and cost recovery. At the same time, the Commission correctly determined that service providers using any technology should be able to bid in the auction according to the levels of service they can actually provide. A prohibition on allowing providers of certain technologies from representing their true performance standards reverses this determination, ultimately leading to less competition and fewer choices for consumers that need it most.

Very best regards,

*/s/ David Goldman*

David Goldman  
Director of Satellite Policy

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Attachments

ATTACHMENT A  
LIST OF PARTICIPANTS

Chairman Pai's Office  
Preston Wise

Commissioner Carr's Office  
Joseph Calascione

SpaceX  
David Goldman  
Mat Dunn (for Chairman Pai's office only)

## ATTACHMENT B

# SpaceX satellites are being used by the Air Force to test encrypted internet for military planes

[REUTERS](#) OCTOBER 23, 2019 5:17 AM

(Reuters) — The Air Force is using SpaceX’s fledgling satellite network to test encrypted internet services for a number of military planes, the space company’s president said on Tuesday, detailing results for the first customer of Elon Musk’s planned constellation of thousands of broadband-beaming satellites.

“We are delivering high bandwidth into the cockpit of Air Force planes,” SpaceX president and chief operating officer Gwynne Shotwell said on Tuesday. “Right now, we’re just testing the capability and figuring out how to make it work.”

SpaceX’s so-called Starlink constellation, a planned network of up to 30,000 satellites in low Earth orbit intended to beam broadband internet globally, is crucial to generating the cash to fund development of Musk’s heavy-lift Mars rocket, dubbed Starship.

The Air Force program, known as Global Lightning, started testing with SpaceX in early 2018 and used Starlink’s first two test satellites to beam to terminals fixed to a C-12 military transport plane in flight, demonstrating internet speeds of 610 megabits per second, SpaceX senior vice president Tim Hughes said. That’s fast enough to download a movie in under a minute.

SpaceX in May launched the first batch of 60 operational satellites into low Earth orbit and plans to launch another 60 in November from an Air Force station in Florida.

Shotwell said the program, part of a \$28 million Pentagon contract awarded to SpaceX in late 2018, is ongoing and expects to test Starlink with “a number” of additional military aircraft types. That contract also includes testing communications between satellites in orbit.

The U.S. military is increasingly dependent on satellites to determine what it does on the ground, guiding munitions with space-based lasers and satellites, as well as securing such assets from satellite-jamming technology from Russia and China.

The head of the new U.S. Space Command, General John Raymond, told reporters in September that he visited SpaceX’s Starlink factory in Redmond, Washington, but he did not go into details about the Pentagon’s plans.

Starlink is competing with Softbank-backed OneWeb, which aims to give millions of people in remote and rural areas high-speed internet beamed down from space and has already launched a batch of six satellites. Raymond said he also visited OneWeb’s new satellite production line in Cape Canaveral, Florida.

*(Reporting by Joey Roulette; editing by Greg Mitchell and Sandra Maler)*